## REMARKS/ARGUMENTS

The Office Action mailed January 3, 2007, has been received and reviewed. Claims 1, 3 through 18, 20 through 35, 40, 42, 43, and 45 through 55 are currently pending in the application. Claims 1, 3 through 18, 22 through 31, 34, 35, 42, 43, 45, 46, and 50 through 55 stand rejected. Claim 40 is allowed, and Claims 20, 21, 32, 33, and 47 through 49 have been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation. Applicants have amended claims 25, 27, and 42, cancelled claim 26, and respectfully request reconsideration of the application as amended herein.

### 35 U.S.C. § 112 Claim Rejections

Claims 42, 43, 46, and 51 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

Claim 42 has been amended to recite, in part, "wherein the axial thrust valve and the plurality of maneuver valves are configured to effect a rapid depressurization of the pressure vessel during combustion of the solid propellant charge to substantially extinguish combustion thereof when the axial thrust valve and the plurality of maneuver control valves are fully open." As amended, claim 42 complies with the enablement requirement of 35 U.S.C. § 112, first paragraph.

Claim 43 recites "the solid propellant charge exhibits the lowest possible *steady state* burn rate when the axial thrust valve is fully open and the plurality of maneuver control valves are fully closed." (Emphasis added) Claim 43 does not recite that the solid propellant charge exhibits the lowest possible *combustion* when the axial thrust valve is fully open and the plurality of maneuver control valves are fully closed. Rather, claim 43 only recites that the lowest possible *steady state* burn rate is exhibited when the axial thrust valve is fully open and the plurality of maneuver control valves are fully closed. A rocket motor may exhibit either *transient or steady-state* behavior. All combustion is not steady-state. Therefore, claim 43

includes no contradictions, and the specification describes the subject matter in such a way as to enable one skilled in the art to make and/or use the invention.

Claims 46 and 51 are enabled by the specification at paragraph [0030] and [0029]. "Temperature as well as pressure sensors may be added to the pressure vessel to monitor these parameters..."(paragraph [0030]) "Maneuver control valves 28, 30, 36a, 36b, 38a and 38b may, as with axial thrust valve 10, be actuated by battery-powered actuators (not shown) powered by battery 46 or one or more other batteries. Alternatively, the valves, if electrically actuated, may be powered by a fuel cell." (paragraph [0029]) One skilled in the art is familiar with the use of valve actuators to modulate flow area. Therefore, the specification enables one skilled in the art to use temperature and pressure sensors to monitor the grain, and modulate the flow area of a valve accordingly.

Accordingly, it is respectfully submitted that the 35 U.S.C. § 112, first paragraph rejection of claims 42, 43, 46, and 51 be withdrawn.

Claims 1, 25, 29, 42, and 52 through 55 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

It is respectfully submitted that the requirements of 35 U.S.C. § 112, second paragraph, have been met for all of claims 1, 25, 29, 42, and 52 through 55. Although rapid depressurization of a combustion chamber of solid propellant rocket motors may be a well-known technique in the art, it is respectfully submitted that the systems, methods, and motors of claims 1, 25, 29, 42, and 52 through 55 are not well-known in the art. Furthermore, it is respectfully submitted that claims 1, 25, 29, 42, and 52 through 55 are not simply directed to a "desired result," but rather, claims 1, 25, 29, 42, and 52 through 55 are directed to systems or motors that are configured to produce a specified result or methods that may produce a specified result.

For example, in regards to claim 1 and 52, Applicants respectfully submit it is not well-known in the art for a propulsion system to comprise at least one axial thrust valve and at least one maneuver control valve, "wherein the at least one axial thrust valve and the at least one

maneuver control valve *are operable in combination for simultaneous opening* to rapidly reduce pressure within [a] pressure vessel to a degree sufficient to substantially extinguish combustion of [ ] at least one solid propellant grain."

As such, claims 1, 25, 29, 42, and 52 through 55 particularly point out and distinctly claim the subject matter which applicants regard as the invention. Accordingly, it is respectfully submitted that the 35 U.S.C. § 112, second paragraph rejection of claims 1, 25, 29, 42, and 52 through 55 be withdrawn.

**35 U.S.C. § 102(b) Anticipation Rejections**

Anticipation Rejection Based on U.S. Patent No. 3,724,217 to McDonald

Claim 25 stands rejected under 35 U.S.C. § 102(b) as being anticipated by McDonald (U.S. Patent No. 3,724,217). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The 35 U.S.C. § 102(b) anticipation rejections of claim 25 is improper because McDonald fails to either expressly or inherently describe each and every element as set forth in claim 25.

McDonald describes a rocket system with a gas generator 2 connected to a forward end of a rocket motor 11 by pipe 12. Gas generator 2 includes a valve means 6 capable of opening and closing a port 7 that is in communication with perforation 5 in the forward end of gas generator 2. Valve means 6, 23 are capable of extinguishing a propellant by a sudden release of pressure within gas generator 2 or rocket system 11. Pipe 12 is provided with a branch pipe 13 for directing gases from the rocket motor 11 or gas generator 2 to control devices (not shown) for controlling the velocity, attitude, and direction of the rocket system.

Claim 25, as amended herein, recites a "method for extinguishing a solid propellant undergoing combustion within a pressure vessel of a propulsion system, comprising: providing a

plurality of valves in communication with the pressure vessel, wherein the plurality of valves comprises at least one valve in communication with a thruster for providing axial thrust and at least two valves in respective communication with thrusters for providing thrust for maneuvering; and opening the plurality of valves to rapidly reduce pressure within the pressure vessel to a degree sufficient to substantially extinguish combustion of the solid propellant."

McDonald fails to describe opening a plurality of valves, including at least one valve in communication with a thruster for providing axial thrust and at least two valves in respective communication with thrusters for providing thrust for maneuvering, to rapidly reduce pressure within the pressure vessel to a degree sufficient to substantially extinguish combustion of the solid propellant. Rather, the description in McDonald relating to an opening of a valve for a sudden release of pressure within gas generator 2 or rocket system 11 is limited to valve means 6, 23, which as it appears to the Applicants, are not in communication with thrusters for providing thrust for *maneuvering*. Furthermore, it appears to the Applicants that McDonald lacks any description that valve 16, which is used for directing gases to the control devices, may be opened for rapid reduction of pressure within gas generator 2 or rocket motor 11.

Therefore, it is respectfully submitted that McDonald fails describe each and every element of claim 25. Accordingly, it is respectfully submitted that the rejection to claim 25 should be withdrawn.

**35 U.S.C. § 103(a) Obviousness Rejections**

Obviousness Rejection Based on U.S. Patent No. 5,765,367 to Denoel et al., in View of U.S. Patent No. 3,999,379 to LeFebvre

Claims 1, 3 thorough 18, 22 through 31, 34, 35, 42, 43, 45, 46, and 50 through 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Donoel et al. (U.S. Patent No. 5,765,367), in view of LeFebvre (U.S. Patent No. 3,999,379). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must

> be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The teachings of Donoel relate to a control system having a plurality of gas generators 10, wherein each gas generator 10 comprises a combustion chamber 12 containing a solid propellant 14. Combustion chamber 12 distributes, via passage 20, combustion gases produced by generator 10 to the plurality of nozzles 32. The plurality of nozzles 32 are pointing in different directions and fitted with individual gates 34. Multiple generators within the control system may be ignited simultaneously or in succession to obtain a desired flow rate for a time t. After igniting the generators, high temperatures gases exit the generator via passage 20 and combustion continues until all of the fuel is consumed. (FIG. 2B). Flow rate and combustion time is extended only by igniting additional generators. Furthermore, Donoel teaches isolating each generator 10 from hot gas within pipework 30 to avoid the ignition of an unfired generator.

LeFebvre teaches a rocket motor with thrust termination capabilities. The rocket motor includes a nozzle assembly 7 connected to a pressure vessel 1 by means of explosive bolts 11 and extrusable bolts 10. Upon desired thrust termination, explosive bolts 11 are blown and the nozzle assembly 7 is permitted to separate from the pressure vessel 1 and move to the rear by drawing the extrusable bolts through dies 12. LeFebvre further teaches that once the nozzle assembly 7 has separated from the pressure vessel 1 gases will rapidly escape between the nozzle assembly 7 and the pressure vessel 1 and, therefore, the rocket motor will be rapidly depressurized.

Applicants assert that there a number of reasons that a prima facie case of obviousness by the cited prior art has not been established against any of the claims 1, 3 through 18, 22 through 31, 34, 35, 42, 43, 45, 46, and 50 through 55, as is required to maintain the rejections of these claims under 35 U.S.C. § 103(a).

First, Applicants assert that one of ordinary skill in the art would not have been motivated to combine the teachings of Denoel and LeFebvre in the matter that has been asserted. In

particular, the teachings of Denoel are directed at obtaining a desired flow rate of gas for a time t wherein combustion continues until all the gas is consumed. Therefore, one of ordinary skill in the art would have no motivation to rapidly depressurize the gas generator of Denoel to terminate thrust as taught in LeFebvre.

Second, Applicant asserts that Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of any of claims 1, 3 through 18, 22 through 31, 34, 35, 42, 43, 45, 46, and 50 through 55.

Independent claim 1 recites a "propulsion system, comprising: a pressure vessel containing a propellant, wherein the propellant comprises at least one solid propellant grain; at least one axial thrust valve in communication with the pressure vessel and configured for selectively releasing gases generated by combustion of the propellant within the pressure vessel to directly provide axial thrust; and at least one maneuver control valve in communication with the pressure vessel and configured for selectively releasing gases generated by combustion of the propellant within the pressure vessel to provide thrust for maneuvering, wherein the at least one axial thrust valve and the at least one maneuver control valve are operable in combination for simultaneous opening to rapidly reduce pressure within the pressure vessel to a degree sufficient to substantially extinguish combustion of the at least one solid propellant grain."

It is respectfully submitted that both Denoel and LeFebvre lack any teaching or suggestion of an axial thrust valve and a maneuver control valve which are *operable in combination for simultaneous opening to rapidly reduce pressure within a pressure vessel* to a degree sufficient to substantially extinguish combustion of a solid propellant grain. It appears to the Applicants that the teachings of LeFebvre are limited to depressurizing a rocket motor by exploding bolts to enable the nozzle assembly to move and create a space between nozzle flange 6 and closure flange 5. Furthermore, Denoel fails to teach or suggest rapidly reducing pressure within a gas generator 10. Therefore, Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of independent claim 1.

Claims 3 thorough 18, and 22 through 24, and 52 are each allowable, among other reasons, as depending from claim 1 which is allowable.

Independent claim 25, as amended herein, recites a "method for extinguishing a solid propellant undergoing combustion within a pressure vessel of a propulsion system, comprising:

providing a plurality of valves in communication with the pressure vessel, wherein the plurality of valves comprises at least one valve in communication with a thruster for providing axial thrust and at least two valves in respective communication with thrusters for providing thrust for maneuvering; and opening the plurality of valves to rapidly reduce pressure within the pressure vessel to a degree sufficient to substantially extinguish combustion of the solid propellant."

It is respectfully submitted that both Denoel and LeFebvre lack any teaching or suggestion of *opening a plurality of valves to rapidly reduce pressure within a pressure vessel* to a degree sufficient to substantially extinguish combustion of a solid propellant. As described above in reference to claim 1, the teachings of LeFebvre are limited to depressurizing a rocket motor by exploding bolts to enable the nozzle assembly to move and create a space between nozzle flange 6 and closure flange 5. Furthermore, Denoel fails to teach or suggest rapidly reducing pressure within a gas generator 10. Therefore, Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of independent claim 25.

Claims 27, 28, and 53 are each allowable, among other reasons, as depending from claim 25 which is allowable.

Independent claim 29 recites a "propulsion system for propelling and maneuvering a vehicle, the system comprising: a pressure vessel containing at least one solid propellant charge for generating gases through combustion thereof; at least one valve in communication with the pressure vessel and with a thruster for providing axial thrust for the vehicle by release of combustion gases from the pressure vessel; a plurality of valves in communication with the pressure vessel and respectively in communication with thrusters located and oriented for providing maneuver control for the vehicle, wherein each valve of the plurality is selectively operable to effect at least one of pitch, yaw and roll control of the vehicle through release of combustion gases through a thruster; and wherein the at least one valve and the valves of the plurality are operable to open fully in combination to cause rapid depressurization of the interior of the pressure vessel to substantially extinguish combustion of the at least one solid propellant charge."

It is respectfully submitted that both Denoel and LeFebvre lack any teaching or suggestion of at least one valve in communication with the pressure vessel and with a thruster for providing axial thrust and a plurality of valves in communication with the pressure vessel and

respectively in communication with thrusters located and oriented for providing maneuver control for the vehicle, *wherein the at least one valve and the valves of the plurality are operable to open fully in combination to cause rapid depressurization of the interior of a pressure vessel.* As described above in reference to claims 1 and 25, the teachings of LeFebvre are limited to depressurizing a rocket motor by exploding bolts to enable the nozzle assembly to move and create a space between nozzle flange 6 and closure flange 5. Furthermore, Denoel fails to teach a rapid depressurization within a gas generator 10. Therefore, Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of independent claim 29.

Claim 30 and 31, 34, 35, and 54 are each allowable, among other reasons, as depending from claim 29 which is allowable.

Independent claim 42 recites a "rocket motor, comprising; a pressure vessel; a solid propellant charge disposed within the pressure vessel for generating combustion gases; a selectively operable axial thrust valve for release of the combustion gases from the pressure vessel to directly provide axial thrust; and a plurality of selectively operable maneuver control valves for release of the combustion gases from the pressure vessel, wherein the axial thrust valve and the plurality of maneuver control valves are configured to effect a rapid depressurization of the pressure vessel during combustion of the solid propellant charge to terminate combustion thereof, with at least a portion of the solid propellant charge remaining, when the axial thrust valve and the plurality of maneuver control valves are fully open."

It is respectfully submitted that both Denoel and LeFebvre lack any teaching or suggestion of *an axial thrust valve and the plurality of maneuver control valves configured to effect a rapid depressurization of a pressure vessel.* As described above in reference to claims 1, 25 and 29, the teachings of LeFebvre are limited to depressurizing a rocket motor by creating a space between nozzle flange 6 and closure flange 5. Furthermore, Denoel fails to teach or suggest a rapid depressurization of gas generator 10. Therefore, Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of independent claim 42.

Claims 43, 45, 46, and 55 are each allowable, among other reasons, as depending from claim 42 which is allowable.

Independent claim 50 recites a "propulsion system, comprising: a pressure vessel containing a propellant; at least one axial thrust valve in communication with the pressure vessel

and configured for selectively releasing gases generated by combustion of the propellant within the pressure vessel to directly provide axial thrust; and at least one maneuver control valve in communication with the pressure vessel and configured for selectively releasing gases generated by combustion of the propellant within the pressure vessel to provide thrust for maneuvering, wherein the pressure vessel, the at least one axial thrust valve, and the at least one maneuver control valve are disposed within a common housing."

It is respectfully submitted that both Denoel and LeFebvre lack any teaching or suggestion of a pressure vessel, an at least one axial thrust valve, and an at least one maneuver control valve disposed *within a common housing*. More specifically, it appears to the Applicants that LeFebvre lacks any teaching of a maneuver control valve. Furthermore, the nozzles 32 taught in Denoel may be mounted on each gas generator 10, but Denoel lacks any teaching or suggestion of a pressure vessel, an at least one axial thrust valve, and an at least one maneuver control valve disposed within a common housing. Therefore, Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of independent claim 50.

Independent claim 51 recites a "rocket motor, comprising; a pressure vessel; a solid propellant charge disposed within the pressure vessel for generating combustion gases; a selectively operable axial thrust valve for release of the combustion gases from the pressure vessel to directly provide axial thrust; and a plurality of selectively operable maneuver control valves for release of the combustion gases from the pressure vessel, wherein the axial thrust valve is configured for modulation of a flow area therethrough to compensate for temperature effects to provide substantially constant axial thrust."

It is respectfully submitted that both Denoel and LeFebvre lack any teaching or suggestion of *an axial thrust valve configured for modulation of a flow area therethrough to compensate for temperature effects to provide substantially constant axial thrust*. Therefore, Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of independent claim 50.

Obviousness Rejection Based on U.S. Patent No. 3,532,297 to Maes, in View of U.S. Patent No. 3,724,217 to McDonald

Claims 1, 3 through 18, 22 through 31, 34, 35, 42, 43, 45, 46, and 50 through 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Maes (U.S. Patent No. 3,532,297), in view of McDonald. Applicants respectfully traverse this rejection, as hereinafter set forth.

The teachings of McDonald have been summarized above.

Maes teaches a microrocket motor to control attitude, orbital position, or spin rate of satellites or like space vehicles. The microrocket motor includes a propellant tank 10, thrustor block 14, valves 18, 18, 20, 22 and respective nozzles 24, 26, 28, 30. Propellant tank 10 includes propellant cake 12 and an optional electric heating element 46 so as to radiantly heat the propellant cake 12. In operation, propellant vapor may flow from tank 10 into thrustor block 14 then out an open valve and nozzle assembly. Exhaust of the propellant vapor from the propellant tank 10 may be directed by means of a three-position shear seal valve 104 controlled bi-directionally by an electrically energized torque motor 106. Valve 104 may deliver vapor propellant to outlet conduits 108, 110.

Applicants respectfully assert that a prima facie case of obviousness by the cited prior art has not been established against any of the claims 1, 3 through 18, 22 through 31, 34, 35, 42, 43, 45, 46, and 50 through 55, as is required to maintain the rejections of these claims under 35 U.S.C. § 103(a). More specifically, Applicants assert that Denoel and LeFebvre, taken either together or separately, do not teach or suggest each and every element of any of claims 1, 3 through 18, 22 through 31, 34, 35, 42, 43, 45, 46, and 50 through 55

In reference to independent claim 1, McDonald and Maes both lack any teaching or suggestion of an *axial thrust valve and a maneuver control valve which are operable in combination for simultaneous opening to rapidly reduce pressure* within a pressure vessel to a degree sufficient to substantially extinguish combustion of a solid propellant grain. Rather, the teachings of McDonald relating to a sudden release of pressure within gas generator 2 or rocket system 11 are limited to valve means 6, 23, which as it appears to the Applicants, are not operable in combination with a maneuver control. Furthermore, Maes fails to teach or suggest

rapidly reducing pressure within propellant tank 10. Therefore, McDonald and Maes, taken either together or separately, do not teach or suggest each and every element of independent claim 1.

Claims 3 thorough 18, and 22 through 24, and 52 are each allowable, among other reasons, as depending from claim 1 which is allowable.

In reference to independent claim 25, it is respectfully submitted that both McDonald and Maes lack any teaching or suggestion of opening a plurality of valves, *including at least one valve in communication with a thruster for providing axial thrust* and *at least two valves in respective communication with thrusters for providing thrust for maneuvering*, to rapidly reduce pressure within the pressure vessel to a degree sufficient to substantially extinguish combustion of the solid propellant. As described above in reference to claim 1, the teachings of McDonald relating to an opening of a valve for a sudden release of pressure within gas generator 2 or rocket system 11 are limited to valve means 6, 23, which as it appears to the Applicants, are not in communication with a thruster for providing thrust for maneuvering. Furthermore, Maes fails to teach or suggest rapidly reducing pressure within propellant tank 10. Therefore, McDonald and Maes, taken either together or separately, do not teach or suggest each and every element of independent claim 25.

Claims 27, 28, and 53 are each allowable, among other reasons, as depending from claim 25 which is allowable.

In reference to independent claim 29, it is respectfully submitted that both McDonald and Maes lack any teaching or suggestion of at least one valve in communication with the pressure vessel and with a thruster for providing axial thrust and a plurality of valves in communication with the pressure vessel and respectively in communication with thrusters located and oriented for providing maneuver control for the vehicle, *wherein the at least one valve and the valves of the plurality are operable to open fully in combination to cause rapid depressurization of the interior of a pressure vessel*. As described above in reference to claims 1 and 25, the teachings of McDonald relating to a sudden release of pressure within gas generator 2 or rocket system 11 is limited to valve means 6, 23, which as it appears to the Applicants, are not in communication with thrusters located and oriented for providing maneuver control. Furthermore, Maes fails to teach or suggest a rapid depressurization of propellant tank 10. Therefore, McDonald and Maes, taken either together or separately, do not teach or suggest each and every element of

independent claim 29.

Claim 30 and 31, 34, 35, and 54 are each allowable, among other reasons, as depending from claim 29 which is allowable.

In reference to independent claim 42, it is respectfully submitted that both McDonald and Maes lack any teaching or suggestion of *an axial thrust valve and the plurality of maneuver control valves sized to effect a rapid depressurization of a pressure vessel.* As described above in reference to claims 1, 25 and 29, the teachings of McDonald relating to a sudden release of pressure within gas generator 2 or rocket system 11 is limited to valve means 6, 23, which as it appears to the Applicants, are not maneuver control valves. Furthermore, Maes fails to teach or suggest a rapid depressurization of propellant tank 10. Therefore, McDonald and Maes, taken either together or separately, do not teach or suggest each and every element of independent claim 42.

Claims 43, 45, 46, and 55 are each allowable, among other reasons, as depending from claim 42 which is allowable.

In reference to independent claim 50, it is respectfully submitted that both McDonald and Maes lack any teaching or suggestion of *a pressure vessel, an at least one axial thrust valve, and an at least one maneuver control valve disposed within a common housing.* Therefore, McDonald and Maes, taken either together or separately, do not teach or suggest each and every element of independent claim 50.

In reference to independent claim 51, it is respectfully submitted that both McDonald and Maes lack any teaching or suggestion of an *axial thrust valve configured for modulation of a flow area therethrough to compensate for temperature effects to provide substantially constant axial thrust.* Therefore, McDonald and Maes, taken either together or separately, do not teach or suggest each and every element of independent claim 51.

**Objections to Claims 20, 21, 32, 33, 47 through 49/Allowable Subject Matter**

Claims 20, 21, 32, 33, and 47 through 49 stand objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. Although the indication of allowable

subject matter is noted with appreciation, Applicants respectfully submit that claims 20, 21, 32, 33, and 47 through 49 are allowable as presently presented.

## ENTRY OF AMENDMENTS

The amendments to claims 25, 27, and 42 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

## CONCLUSION

Claims 1, 3 through 18, 20 through 35, 40, 42, 43, and 45 through 55 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

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